

CLAIMS

1. Dispenser - applicator (100) of a fluid or powder product, typically a cosmetic product, onto a support, typically the skin, including a receptacle for containing said product, said receptacle being formed from a body (105) and a distribution head (120) provided with a wall (122) in which there is at least one orifice (121) and a cap (110) for blocking the distribution head by being sunk onto the head along a direction D, the cap including a first means (119) of reversible fixing by being axially sunk along the direction D, typically a rim or a click fit groove, and the head including a second means (129) of reversible fixing, typically a groove or a click fit rim, the first and second reversible fixing means cooperating such that the cap can block the head been axially sunk along the direction D, the dispenser - applicator being characterised in that:

a) the single orifice or the plurality of n orifices (121) does not have symmetry of revolution about any axis A parallel to the sinking direction D;

b) the cap includes a bottom (112) with a single axial projection or a plurality of n axial projections (111) with a section adapted to the section of the single orifice or the plurality of n orifices, such that the orifice(s) is (are) closed off by the axial projection(s) at the end of the axial sinking process;

c) the cap is provided with a first orientation means (115; 215 and 217) and the head is provided with a second orientation means (125 and 127; 225), the first and second orientation means cooperating during the axial sinking process so as to:

c1) firstly orient the cap with respect to the head by relative rotation about an axis A parallel to the sinking direction D, such that the single axial projection or the plurality of n axial projections face(s) the single orifice or the plurality of n orifices without touching the wall (122) provided with the orifice(s), then

c2) control axial displacement of the cap towards the head such that the axial projections close off the orifice(s).

2. Dispenser – applicator (100) according to claim 1, characterised in that the distribution head has a top wall (122) provided with the single orifice or the

plurality of n orifices, substantially perpendicular to the axis A, in that the bottom (112) of the cap, substantially perpendicular to the axis A, reaches close to the top wall of the head at the end of the sinking process, and in that the axial projection(s) (111) form a sealing pin or a plurality of n sealing pins capable of closing off the single orifice or the plurality of n orifices due to a section adapted to the section of the corresponding orifice.

3. Dispenser – applicator (100) according to claim 1 or 2 in which the head has a top wall (122) with a circular peripheral contour and a sidewall (124) bearing on the circular peripheral contour, the top wall and the sidewall having a symmetry of revolution about the axis A, and in which the cap (110) is provided with a skirt or a sidewall (114) also substantially cylindrical, that matches the shape of the sidewall (124) of the head, on the outside, the sidewall of the head and the skirt or sidewall of the cap being provided with the second and first orientation means.

4. Dispenser – applicator (100) according to any of claims 1 to 3 in which there are several orifices, their arrangement having a symmetry of order n about the axis A, where n is an integer number strictly greater than 1, and in which the first and second orientation means are advantageously arranged respecting a symmetry of order  $n/k$ , where k is an integer greater than or equal to 1, about axis A.

5. Dispenser – applicator (100) according to any of claims 1 to 4 in which first and second orientation means are systems combining substantially helical ramps (125; 215) acting as a stop to radial projections (1150; 2250) to perform function c1), and axial grooves (127; 217) guiding the radial projections at the end of axial sinking to perform function c2).

6. Dispenser – applicator (100) according to claim 5 in which the substantially helical ramps have a slope along the circumferential direction that corresponds to an angle ( $\alpha$ ) between  $20^\circ$  and  $70^\circ$  measured from a plane perpendicular to axis A.

7. Dispenser – applicator (100) according to claim 5 or 6, in which the radial projections and the substantially helical ramps have corresponding radial

heights such that, regardless of their dimensional manufacturing tolerances, there is a sufficient radial overlap to assure that the radial projections stop on the ramps, typically, between 0.1 and 2 mm, preferably more than 0.5 mm.

8. Dispenser – applicator (100) according to any of claims 5 to 7 in which the substantially helical ramps are twice as numerous as the radial projections and the axial grooves because they are associated in pairs, descending (125) or rising (215) with the same slope profiles as far as an axial groove (127; 217), thus imposing a rotation of the cap in the clockwise or anticlockwise direction, depending on the point at which the radial projection reached the stop on the helical ramp.

9. Dispenser – applicator (100) according to any of claims 5 to 8 in which the spatial configuration of the first and second orientation means is defined such that during axial sinking process of the cap into the receptacle head, the ends of axial projections (111, 211) remain above the top wall (122) of the receptacle head before the radial projections (1150, 2250) leave the substantially helical ramps (125, 215) to engage into the axial grooves (127, 217).

10. Dispenser – applicator (100) according to any of claims 1 to 9 in which the sidewall of the dispenser head and the skirt or sidewall of the cap are also provided with the second and first reversible fixing means, typically continuous or discontinuous rims and / or click fit grooves, bearing on the form of a torus with axis A as axis of revolution.

11. Dispenser – applicator (100) according to any of claims 1 to 10 in which the dispenser head is created by the assembly of an insert (130) molded separately then fixed onto a receptacle head (101) provided with a neck (102), the insert carrying the top wall provided with the orifice(s) and the skirt or sidewall provided with orientation means and possibly the reversible click fit means of the cap on the outside.

12. Dispenser – applicator (100) according to claim 11 in which the skirt or sidewall of the insert is also provided with a second irreversible fixing means on its inside surface designed to cooperate with a first means (103) of irreversible fixing arranged on the outside surface of the receptacle neck.

13. Dispenser – applicator (100) according to claim 11 or 12 in which the skirt or sidewall of the insert is also provided with a second anti-rotation means on its inside surface designed to cooperate with a first anti-rotation means (104) arranged on the outside surface of the receptacle neck.

14. Cap (210), particularly designed to block the head of a receptacle – applicator according to any of claims 1 to 13, characterised in that it has a skirt or a sidewall (214) provided with  $n$  axial grooves (217) and  $2n$  substantially helical ramps (215),  $n$  being an integer strictly greater than 1, the ramps being associated in pairs with one of the axial grooves, arranged on each side of the axial groove and having profiles with slopes symmetric about a plane passing through axis (A) of the cap and the axial groove.

15. Dispenser head, particularly a head belonging to a dispenser applicator according to any of claims 1 to 13, characterised in that it has a sidewall (114) provided with  $n$  axial grooves (127) and  $2n$  substantially helical ramps (125),  $n$  being an integer strictly greater than 1, the ramps being associated in pairs with one of the axial grooves, arranged on each side of the axial groove and having profiles with slopes symmetric about a plane passing through axis (A) of the head and the axial groove.